

USSR

LYAPICHEV, I. G., GONCHAREVA, V. V., and SAVCHENKO, L. B., Tomsk Polytechnic Institute

"Effect of Structure on the Engineering Properties of Hard-to-Machine Alloys"

Novokuznetsk, IVUZ-Chernaya Metallurgiya, No 6, 1971, pp 128-131

Abstract: Improvement of engineering properties of steels and alloys alloyed with Ni, Co, Al, and Ti permit the use of more productive cutting modes and, in individual cases, special pressure treatment with a complex stressed state. The alloys investigated were YuNDK24, YuNDK25B, YuNDK30T5, YuNDK35T5, YuNDK40T7, and YuNDK42T8.

X-ray and metallographic analysis was used to check the high-temperature state of Fe-Ni-Al-Co alloys. Lattice constants and intensity (number) of basic phases as well as alloy microhardness of the alloys in the 450-1000°C interval were measured. Upon increasing the temperature of Fe-Ni-Al-Co alloys hardness is lowered, phase periods (lattice constants) are converged, and number of phases increases, which improves homogeneity and the corresponding deformability and machinability of the alloys. A combination of these properties should provide the opportunity of being able to hot-turn the alloys. Three figures, one table, six bibliographic references.

1/1

- 87 -

1/2 007 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--ALKYD LINCLEUM BASED ON CAPROLACTAM BY PRODUCTS -U-  
AUTHOR-(C4)-GLACHARKO, V.M., KISELEVA, R.A., TORBINSKIY, V.V., KONSHIN,  
N.P.  
COUNTRY OF INFO--USSR  
SOURCE--STRICT. MATER. 1970, (3), 19-20  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR  
TOPIC TAGS--CONSTRUCTION MATERIAL, CAPROLACTAM, ALKYD RESIN, INDUSTRIAL  
BYPRODUCT, ADIPIC ACID, SUCCINIC ACID  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3002/1245 STEP NO--UR/0226/70/000/003/0019/0020  
CIRC ACCESSION NO--AP0128661  
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0128651

ABSTRACT/EXTRACT--(U) CP-O- ABSTRACT. CAPROLACTAM BY PRODUCTS CONTG. ADIPIC, SUCCINIC, AND GLUTARIC ACIDS WERE ACIDIFIED WITH H SUB2 SO SUB4 TO PH 3, THE ORG. LAYER WAS SEPD. FROM THE AQ. SOLN., AND ALLOWED TO REACT WITH GLYCEROL IN THE PRESENCE OF KOH TO GIVE A DARK BROWN, ALKYD RESIN USED AS A BINDER FOR LINOLEUM.

UNCLASSIFIED

USSR

UDC: 662.215.1

DUBOVIK, A. V., GONCHAROV, A. A., and BOBOILEV, V. K., Moscow

"Approximate Physical Model of Low-Velocity Detonation in Liquids"

Novosibirsk, Fizika Goreniya i Vzryva, Vol 9, No 4, Jul-Aug 73, pp 521-529

Abstract: The authors study a single-dimensional problem associated with the propagation of a self-maintaining wave disturbance in a chemical reaction free, unbounded, two-phase medium (liquid with gas-filled bubbles) which is represented in the form of a set of interstratifications which are divided by gas intervals and oriented normally with respect to the propagation of the wave. The parameters of the indicated wave disturbance are calculated, taking into consideration the particulars of the impact compression of the bubbles. This is done using the hypothesis that the reaction can take place only between the intervals of the interstratifications. The analogy with low-velocity detonation is obvious from the studied physical picture of the process.

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GONCHAROV, A.D.

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59208

6.73

XII-3. CHARACTERISTIC FEATURES OF THE GROWTH OF ALLOID SEMICONDUCTOR THIN LAYERS FROM A MELT IN THE GAP BETWEEN SUBSTRATES OF DIFFERENT NATURE.

(Article by A. V. Sandulova, P. Rudol'f, A. D. Goncharov, V. Il'ina, V. Ya. Shvechko, L. Vovk, Ivanovskiy, I. I. Simoniya, N. P. Prokopenko, K. A. Shteyn, Polymodifikatsiya, Kiev, 1977, No. 1, p. 155.)

The prospectiveness of the method of manufacturing semiconductor thin films by directional crystallization of a melt in the gap between dielectric nonorienting substrates is determined by the possibility of obtaining semiconductor thin films with previously given parameters and structure. The solution of this problem is connected not only with studying the crystallization process of the semiconductor thin films of the melt but also the investigation of means of obtaining alloyed semiconductor thin films and distribution of the admixture in them after manufacture.

At the present time the results of these studies performed on cadmium antimonide are presented. It is demonstrated that the process of crystallization and, correspondingly, the nature of the admixture distribution in the semiconductor thin layers is determined by the form of the surface and the speed of the crystallization front. From the theoretical analysis of the thermal conditions of cooling of the substrate-layer-substrate composition, the interrelation is determined between the conditions of manufacturing the semiconductor thin layers (the cooling rate, the temperature with respect to the length of the layer, the layer and substrate parameters) and the nature of the process of crystallization of the melt (the morphology and the speed of the phase interface in the layer, additional supercooling of the melt at this interface). In addition, the optimal conditions of crystallization of alloyed semiconductor thin layers are determined. It is shown that the possibility of the occurrence of significant concentration supercoolings, possible means of obtaining alloyed semiconductor thin layers from previously alloyed suspensions and when allowing the melt in the process of manufacturing the semiconductor thin layers are demonstrated. In the example of CdSb a study was made of the distribution of the Ag, Te, Se and Ga admixtures in semiconductor layers manufactured under various conditions of crystallization. The optimal conditions of manufacturing monocrystalline semiconductor thin layers of CdSb and other semiconductors with the properties of massive specimens and homogeneous distribution of the admixture in the volume are determined.

USSR

UDC 621.315.592

SANDULOVA, A. V., GORTYNSKAYA, I. D., NOSENKO, A. YE., ~~GORCHAKOV, A. D.~~, L'vov Polytechnic Institute

"Optical and Photoelectric Properties of Thin Layers of Tellurium Obtained by Compression of a Melt"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 6, No 5, 1972, pp 976-977

Abstract: A study was made of the optical absorption and reflection spectra and the photoconductivity of model crystalline layers of tellurium in the spectral range of 2.5-15 microns at temperatures of 390°K. The studies were performed in nonpolarized light, and modulated illumination was used. The characteristic curve of the spectral distribution of the photoconductivity of thin layers of tellurium obtained by compression of a melt at 90°K is presented. Two peaks in the short-wave absorption edge region are observed. The distinguishing feature of the spectral curves of the photoresponse are the presence of a weak peak in the vicinity of 7 microns and a sharp increase in the photoconductivity in the longer wave region. Explanations are offered for these effects. The simplicity of obtaining model crystalline tellurium layers and the presence of photoconductivity in the ~3.5 and ~11 micron range make these layers prospective for the manufacture of photoreceivers to operate at the temperature of liquid nitrogen.

1/1

- 201 -

Composite Materials

USSR

UDC 621.771.42.669.2/.8

SEVERDENKO, V. P., MATUSEVICH, A. S., and GONCHAROV, A. F., Moscow, Minsk

"Drawing of Composite Materials Based on Aluminum and Copper"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 2, Mar-Apr 73, pp 122-124

Abstract: A study was made of the strain hardening of aluminum-Kh18N10T composites and copper-Kh18N10T composites by means of plastic deformation at room temperature and at the temperature of liquid nitrogen. Also investigated was the possibility of plastic deformation of composite materials. The highest permissible deformation of the aluminum-25% Kh18N10T composite is 35% in drawing in a medium of liquid nitrogen and 70% in drawing at room temperature. For the copper-Kh18N10T composite with 20-60% volumetric content of threads, the maximum deformations in the case of the above-mentioned temperatures were 65% and 96%, composite. Applying drawing with subsequent aging made it possible to increase the tensile strengths of the aluminum-Kh18N10T respectively by 1.5-2 times and of the copper-Kh18N10T composite by 2-3 times, in comparison with the initial tensile strength. One figure one table, two bibliographic references.

1/1

USSR

UDC 616.981.452-022.39:595.775.1]-078.7+576.851.45.095.38:576.895.

775

CHEKCHENKO, I. I., USANIAN, Ye. P., YUNDIN, Ye. V., ANANIAN, Ye. L., IGHSOUYAN, E. K., GOLITSY, P. D., and GONCHAROV, A. I., Scientific Research Antiplague Institute of the Caucasus and Transcaucasus and Armenian Antiplague Station, Ministry of Health USSR

"Experience in Serological Examinations of Fleas of Rodents for Plague"

Moscow, Zhurnal Mikrobiologii Epidemiologii i Immunobiologii, No 1, 1973, p 137

Abstract: The minimum number of infected fleas required for a positive serological result is not more than 5 in a mixture with 25 noninfected specimens. The results of serological tests are available within 24 hrs after infection of the test fleas if they are kept at 25°C in a 2% NaCl solution containing 0.002% gentian violet and 1% formalin which effectively extracts plague pathogen PI antigen from the tissue of the insects and preserves it for at least 14 days. The solution with or without the fleas can be used for the serological test which involves neutralization of antibodies with standard plague antigenic erythrocyte diagnostic. The method was verified in field work. In the summer of 1967, 85 samples containing a total of 2,397 fleas collected from field mice and their holes in Transcaucasus were analyzed with both methods in parallel. The serological method detected antigen PI in 57 samples, while the 1/2

- 34 -

USSR

CHERCHENKO, I. I., et al., Zhurnal Mikrobiologii Epidemiologii i Immunobiologii, No 1, 1973, p 137

bacteriological method yielded cultures of plague pathogen in only 21 samples. In summer 1971, positive results were obtained by the serological method in 24% of samples of fleas collected from gophers in the Caucasian Mountains. Subsequently, the bacteriological method used in October 1971 yielded positive results for the first time in that region. The faster and more sensitive serological method is recommended for territorial surveys of plague pathogen.

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USSR

UDC 624.072.2.04:012.4

GONCHAROV, A. K., Moscow

"Design of a Prestressed Reinforced Concrete Rod for the Effects of Freezing and Thawing Cycles"

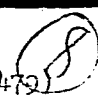
Moscow, Stroyitel'naya Mekhanika i Raschet Soyoruzheniy, No 5, 1972, pp 30-33.

Abstract: In order to show the expediency of the calculations and the proper sequence for their performance, a simple example is given of estimation of frost resistance of a prestressed concrete rod compressed by a longitudinal force. The change in stress-strain state of a rod compressed by force  $p$  is determined as a function of repeated freezing and thawing of the concrete. The case is studied when force  $P$  is applied to the rod before application of the freezing and thawing cycles and acts constantly along the longitudinal axis so that the rod is always in central compression. The reinforcement is placed in the rod symmetrically relative to its main axes of inertia. Calculations are performed for short rods and the stability of the rod is not determined.

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- 29 -

USSR

UDC 616.981.452-022.39-036.23-078.7(479) 

CHERCHENKO, I. I., OGANYAN, Ye. F., YUNDIN, Ye. V., NAYDEN, P. Ye., YEMEL'YANOV, P. F., GOLUBEV, P. D., FILIMONOVA, Yu. A., GONCHAROV, A. I., LABUTETS, N. F., BABAYEV, M. R., ANANYAN, Ye. L., and KHANGULYAN, E. K., Scientific Research Antiplague Institute of the Caucasus and Transcaucasus, and Antiplague Stations, Azerbaydzhan SSR and Armenian SSR

"Experience in Serological Detection of Plague in Rodent Nest Substrate and in Predatory Bird Pellets Under Field Conditions in Natural Foci of the Caucasus"

Moscow, Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, No 3, 1973, pp 15-20

Abstract: Use of the antibody neutralization reaction (ANR) employing plague antigenic erythrocyte diagnosticum was studied as a serological alternative to detection of plague by bacteriological analysis, for which it is not always possible to gather test material in the field. The study was based on the experimental finding that plague F1 antigen persists in the environment long after an epizootic has subsided. In the first phase, three areas in the Caucasus in which epizootics had been registered previously were studied in 1969-1971. Samples of rodent nest substrate were found to contain F1 antigen by the ANR, whereas bacteriological methods were generally unsuccessful,  
1/2

USSR

CHERCHENKO, I. I., et al., Zhurnal Mikrobiologii, Epidemiologii, i Immunobiologii, No 3, 1973, pp 15-20

indicating the usefulness of this method for retrospective analysis. In the second phase an area in which epizootics had not been recorded previously was studied in 1970-1971. While the ANR revealed the presence of F1 antigen in rodent nest substrate, bacteriological analysis did not produce such evidence until 4 months later. This result indicated that the method is also preferential for early detection of plague epizootics. In the final phase pellets regurgitated by predatory birds feeding on plague-carrying rodents were subjected to the ANR. Once again F1 antigen was detected in areas without previous epizootic history up to 2 months prior to detection by bacterial analysis. As a control pellets from an area known to be free of plague for 40 years was subjected to the ANR, and the results were negative. Thus the ANR is shown to be a suitable and preferential method for retrospective and early field detection of natural plague foci.

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- 10 -

1/2 020 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--FUNCTIONAL CHANGES OF THE LIVER IN MUSHROOM POISONING -U-  
AUTHOR--(04)--GRECHISHKIN, D.K., MOZHAYEV, G.A., KLODCHENKO, N.N.,  
GONCHARGOV, A.I.  
COUNTRY OF INFO--USSR  
SOURCE--VRACHEBNOYE DELO, 1970, NR 5, PP 60-62  
DATE PUBLISHED-----70  
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES  
TOPIC TAGS--FUNGUS, POISON EFFECT, LIVER FUNCTION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3001/0433 STEP NO--UR/0475/70/000/005/0060/0062  
CIRC ACCESSION NO--AP0126186  
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0126186

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RESULTS ARE ANALYSED OF A STUDY OF THE CARBOHYDRATE, PIGMENTARY AND ENZYMATIC LIVER FUNCTIONS IN PATIENTS POISONED WITH THE AGARICUS BULBOSUS MUSHROOM. IT WAS FOUND THAT AS A RESULT OF THE EFFECT OF AGARICUS BULBOSUS TOXINES ABNORMAL CHANGES DEVELOP OF THE PIGMENTARY AND ENZYMATIC FUNCTIONS OF THE LIVER, THE CARBOHYDRATE FUNCTION REMAINING UNCHANGED. HEPATOPROTECTING THERAPY IS RECOMMENDED. FACILITY: VOROSHILOVGRADSKOGO MEDITSINSKOGO INSTITUTA.

UNCLASSIFIED

1/2 021 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--TEMPERATURE DEPENDENCE OF THE VAPOR PRESSURE OF  
TRISDIETHYLAMINOCHLOROGERMANE AND TRIETHYLDIETHYLAMINOGERMANE -U-  
AUTHOR-(03)-GONCHAROV, A.K., KARAPETYANTS, M.KH., KOLYAKOVA, G.M.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. FIZ. KHIM. 1970, 44(3), 832  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--VAPOR PRESSURE, ENTROPY, CYCLOHEXANE, THERMAL EFFECT,  
MATHEMATIC EXPRESSION, AMINE DERIVATIVE, CHLORINATED ORGANIC COMPOUND,  
ORGANOGERMANIUM COMPOUND  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3004/2040 STEP NO--UR/0076/70/044/003/0832/0832  
CIRC ACCESSION NO--AP0132297  
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0132297

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. HNET SUB2 REACTED WITH GECL SUB4 IN CYCLOHEXANE TO GIVE (ET SUB2 N) SUB3 GECL (I). BY STATIC AND DYNAMIC METHODS THE VAPOR PRESSURE OF I AT 90-220DEGREES WAS DETD. TO SATISFY THE EQUATION  $\log RHO = A - \frac{B}{C + T}$  WHERE A EQUALS 6.99841, B EQUALS 1841.2414, C EQUALS 174.95, AND TAU IS THE TEMP. (DEGREES C). EXTRAPOLATED B.P. OF I WAS 272.2DEGREES, AND DELTAETA PRIME760 SUBVAP EQUALS 12.5 KCAL PER MOLE, DELTAS PRIME760 SUBVAP EQUALS 22.9 EU. FOR ET SUB3 GENET SUB2 (II) A EQUALS 7.41782, B EQUALS 1984.0035 AND C EQUALS 229.98. EXTRAPOLATED B.P. OF II IS 207.3DEGREES, DELTAETA PRIME760 SUBVAP EQUALS 11 KCAL PER MOLE, AND DELTAS PRIME760 SUBVAP EQUALS 22.9 EU.

FACILITY: MOSK. KHIM.-TEKHNOL. INST. IM.

MENDELEEVA, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 519.2

YELIZAROV, Ye. Ya., GONCHAROV, A. N.

"Dynamics of Biocenoses With Regard to Polyphagia"

Kiev, Teoriya optimal'n. protsessov--sbornik (Theory of Optimum Processes--collection of works), 1972, pp 64-71 (from RZh-Kibernetika, No 7, Jul 73, abstract No 7V281 by the authors)

Translation: The paper deals with the mathematical model of a biocenosis with one species of predator and several species of prey. It is usually assumed that the rate at which a predator consumes prey of a given species is proportional to the frequency of their encounters; this assumption is confirmed in the case of low concentrations of prey. This paper considers the case of high concentration of prey, where the predator shows selective activity, and its diet begins to be predominated by some of the species of prey which the predator prefers over other species.

1/1

USSR

UDC 615.471:[614.777+628.19]074:543.42.062

SINEL'NIKOV, V. Ye., TIMAKHOV, O. N., ININ, Yu. S., IKONNIKOVA, S. V., GIKKEL', A. A., GONCHAROV, A. T., AFONIN, V. I., PERSIYANTSEVA, V. B., and SOKOLOV, B. K., Central Design Bureau and Pilot Plant, USSR Academy of Medical Sciences, Moscow and Institute of Biology of Inland Waters, USSR Academy of Sciences, Borok, Yaroslavl Oblast

"A Multipurpose Spectrofluorimeter to Study Natural and Polluted Water"

Moscow, Gigiyena i Sanitariya, No 1, 1973, pp 65-68

Abstract: The akva-IF spectrofluorimeter developed by the authors can be used for rapid determination of individual organic and mineral compounds present in water, for automatic regulation of fluorescent substances in a stream, for detection in lakes and seas of water masses differing in chemical composition and origin, and for study of the conversion and breakdown of compounds under the influence of biological and physicochemical factors. Analyses can be made in the laboratory, in the field, or on a research vessel. The spectrum of fluorescent compounds can be obtained directly at the sampling site. The apparatus is a single-beam recording spectrofluorimeter designed to function in the visible and UV regions of the spectrum. With the use of interchangeable attachments, it can record spectra of fluorescence, excitation, and phosphorescence in a solution as well as substances separated in chromatographic zones on paper.

1/1

USSR

UDC 621.373:530.145.6

GONCHAROV, B. A.

"Use of Light-Beam Feedback to Stabilize the Power of Optical Emission"

Tr. Mosk. elektrotekhn. in-ta svyazi (Works of the Moscow Electrical Engineering Institute of Communications), 1970, vyp., pp 6-10 (from RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10D258)

Translation: The author describes the block diagram of a laser stabilization system which utilizes light-beam feedback. The laser beam passes through an absorbing medium in the form of an optical gray scale after which it travels to a beam splitter from which part of the emission is reflected to a photoelectric converter. This converter is a conventional photoresistor connected in one of the arms of a balanced Wheatstone bridge. Connected in one diagonal of the bridge is a reference power source, while the mismatch signal is taken from the other diagonal. When there is a change in emission power, the value of the photoresistor varies, disrupting the balance of the bridge, the mismatch signal being sent to the input of a control unit which includes an amplifier feeding one of the windings of an electric motor which moves the gray scale until the voltage mismatch of the bridge disappears. A mathematical description is given of the control process and the results of an experimental study of the described system. A. K.

1/1

- 167 -

USSR

UDC 621.52:539.23(088.8)

GOL'DFARB, V. A., GONCHAROV, E. V., and SYNOROV, V. F.

"Method of Vaporization of Materials in a Vacuum"

USSR Author's Certificate No 281997, filed 15 Aug 68, published 7 Dec 70 (from RZh-Elektronika i yeye primeneniye, No 7, July 1971, Abstract No 7A149P)

Translation: A method is proposed which makes it possible to accomplish a process of vaporization from an annular source, which in its turn leads to an increase of the uniformity and purity of the films obtained with its use. During use of the method, the specimen of the substance being sputtered is distributed in the form of disks on a dielectric base coaxial with the inductor, and the frequency of the electromagnetic field is matched in such a way that sputtering can take place only from the lateral face of the specimen. During this a thin layer of the substance on the lateral face melts and is vaporized. The middle part of the specimen is at a lower temperature and does not vaporize. If necessary the dielectric base on which the disks are distributed can be cooled, which completely eliminates the necessity for interaction of the material being vaporized with the material of the dielectric base. A.F.

1/1

- 55 -

Higher Algebra & Geometry and Topology

USSR

UDC 517.432.1

BAKHTIN, I. A., GONCHAROV, G. M.

"Existence of General Fixed Points for a Combination of Conjugate Operators"

Novosibirsk, Sibirskiy Matematicheskiy Zhurnal, Vol 13, No 1, 1972, pp 17-23

Abstract: Several new theorems of the existence of general fixed points for a combination of conjugate operations are presented. This paper differs from others of its type in that it does not require positive operators nor their commutative characteristics. The research is conducted in real Banach space  $E$ , with  $\Gamma\{A\}$  representing the combination of linear operators  $A$  acting in  $E$ . In the first half of the paper, signs of the existence of general fixed points for commutative combinations of conjugate operators are discussed; in the second half, the authors derive the necessary and sufficient conditions for the existence of the general, positive fixed points for arbitrary combinations of conjugate operators.

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1/2 021 UNCLASSIFIED PROCESSING DATE--11SEP70  
TITLE--MOSSBAUER EFFECT IN THE FES SUBI PLUS X SYSTEM -U-  
AUTHOR--GONCHAROV, G.N., OSTANEVICH, YU.M., TOMILOV, S.B., OSER, L.  
COUNTRY OF INFO--USSR  
SOURCE--PHYSICA STATUS SOLIDI, 1970, VOL 37, NR 1, PP 141-150  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS, PHYSICS  
TOPIC TAGS--IRON, METAL PHASE TRANSITION, MODEL, MOSSBAUER EFFECT, IRON  
SULFIDE, CHEMICAL BONDING, CRYSTAL VACANCY  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1987/0636 STEP NO--GF/0030/70/037/001/0141/0150  
CIRC ACCESSION NO--AP0107233  
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--11SEP70

CIRL ACCESSION NO--AP0107233

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STUDY WAS MADE OF THE COMPOSITION DEPENDENCE OF THE MOSSBAUER EFFECT IN THE FES SUB1 PLUS X SYSTEM IN THE RANGE 0 SMALLER THAN OR EQUAL TO 0.135 AT ROOM TEMPERATURE. THE OBSERVED CHANGES OF THE MOSSBAUER PARAMETERS ARE ATTRIBUTED TO PHASE TRANSITIONS AND RELATED TO THE VARIATION OF THE CONCENTRATION OF IRON VACANCIES WITH COMPOSITION. THE MEASURED VALUE OF THE QUADRUPOLE SPLITTING IS IN GOOD AGREEMENT WITH THE PREDICTION FROM THE POINT CHARGE MODEL. THE PRESENCE OF FE PRIME3 COULD NOT BE INFERRED FROM ANY OBSERVATION IN THE STUDIED RANGE OF CONCENTRATION. THE OBSERVED INFLUENCE OF IRON VACANCIES INDICATES A STRONG SUPEREXCHANGE WHICH CAN BE HELD RESPONSIBLE FOR THE FERROMAGNETIC BOND OF IRON SPINS IN THE C PLANE. A SHORT RANGE ORDER OF VACANCIES IS SUGGESTED FOR THE EXPLANATION OF THE OBSERVED COMPOSITION DEPENDENCE OF THE PHASE TRANSITIONS.

UNCLASSIFIED

USSR

UDC 621.375.9:535

BYKOVSKIY, Yu. A., VELICHANSKIY, V. L., GONCHAROV, I. G., MASLOV, V. A.,  
NIKITIN, V. V.

"Pulsed Semiconductor Laser Used as a High-Resolution Spectroscope"

Leningrad, Optika i Spektroskopiya, No. 3, Mar 71, pp 508-510

Abstract: A method is proposed for graduating a pulsed laser-spectroscope in the optical range with the aid of a Fabry-Perot interferometer. It is pointed out that a unique combination of properties of semiconductor lasers make them promising for high-resolution spectroscopy. The radiation of semiconductor lasers covers a wide spectral range due to a large selection of materials, and any semiconductor laser evenly retunes its frequency with a change in temperature or pressure within the limits permissible for lasers of other types. Also, the line width of a semiconductor laser is sufficiently small; for example, the ratio  $\Delta\nu/\nu = 10^{-9}$ , where  $\Delta\nu$  is the line width and  $\nu$  is the basic frequency, for injection lasers of GaAs and  $\text{Pb}_{0.88}\text{Sn}_{0.12}\text{Te}$ . In this work a pulsed GaAs scanning semiconductor laser was used to observe absorption at the resonance absorption line in cesium-133. The nature in the change of the length of the genera-

1/2

BYKOVSKIY, Yu. A., et al, Optika i spektroskopiya, No. 3, Mar 71, pp 508-510

tion wave of the laser with time was investigated in order to graduate the spectroscopy and be able to measure the frequency interval between absorption lines and the width of these lines. A block diagram of the calibration device is shown. The radiation of the laser diode forms into a parallel beam into which the Fabry-Perot interferometer is placed with a resolution of  $5 \cdot 10^5$ . The distance between absorption lines and their width are functions of the position of the lines on an oscillogram relative to the beginning of the pulse, and this is related to the nonlinear dependence of the wavelength of the laser radiation on time. The reason for this is that generation modes of the laser are determined by the optical length of its resonator. The pulsed excitation mode leads to a nonlinear variation of the increase in temperature of the active region of the injection laser with time. This produces a change in the refractive index of the active medium which basically determines the change in the generation wavelength. The distance between absorption lines was  $9.2 \pm 0.1$  GHz, corresponding to a value obtained by radiospectroscopy methods.

1/2 020 UNCLASSIFIED PROCESSING DATE--18SEP70  
TITLE--Q FACTOR MODULATOR OF A LASER RESONATOR BASED ON A FABRY PEROT  
INTERFEROMETER WITH ALTERNATING ABSORPTION (MODULATOR DUBROTNOSTI  
AUTHOR--(03)-GONCHAROV, I.G., MASLOV, V.A., BYKOVSKIY, YU.A. *G*  
COUNTRY OF INFO--USSR  
SOURCE--ZHURNAL PRIKLADNOI SPEKTROSKOPII, VOL. 12, JAN 1970, PP 136-138  
DATE PUBLISHED-----70  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--HELIUM NEON LASER, FABRY PEROT INTERFEROMETER, Q FACTOR  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REF/FRAME--1979/1610 STEP NO--UR/0368/70/012/000/0136/0136  
CIRC ACCESSION NO--AP0047932  
UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--19SEP70

CIRC ACCESSION NO--AP0047932

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DESCRIPTION OF EXPERIMENTS IN WHICH THE Q FACTOR OF A HELIUM NEON LASER WAS MODULATED AT A WAVELENGTH OF 3.39 MU M AS THE RESULT OF POWER ABSORPTION BY NONEQUILIBRIUM FREE CURRENT CARRIERS IN ITS RESONATOR. A PLANE PARALLEL GERMANIUM PLATE WAS USED AS ONE OF THE RESONATOR MIRRORS AND A FABRY PEROT INTERFEROMETER POSITIONED AT THE FOCUS OF A QUARTZ LENS AS THE OTHER.

UNCLASSIFIED

Lasers and Masers

UDC: 621.315.592

USSR

BYKOVSKIY, Yu.A., VELICHANSKIY, V.L., ~~GONCHAROV~~, I.G., and MASLOV, V.A.

"Using the Fabry-Pérot Resonator for Stabilizing Injection Laser Frequency"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 4, No 4, 1970, pp 685-689

Abstract: This paper is the continuation of an earlier one written by the same four authors (ZhETF, 57, 1109, 1969) in which they gave preliminary results in stabilizing semiconductor laser frequencies by an external resonator. The present article gives the detailed results of investigating the spectral characteristics and the frequency stabilization of injector lasers through the Fabry-Pérot interferometer. The lasers under test were operated in the continuous regime, and their spectral characteristics were studied as a function of the injection current, which determines the active region temperature under steady-state conditions. The laser radiation spectrum was first investigated on a DFS-12 spectrograph with a resolution of about 1 Å to select specimens were GaAs with a length and width of 50 to 200 microns, prepared by the liquid epitaxy method. To guarantee continuous operation, the lasers were placed in a cryostat in a nitrogen atmosphere, with the p and n parts of the diode in contact with the cooling element. Threshold currents ranged

USSR

BYKOVSKIY, Yu.A., et al., Fizika i Tekhnika Poluprovodnikov, Vol 4, No 4, 1970, pp 685-689

from 150 to 500 ma depending on the quality of the specimen and its dimensions. The oscillation wavelength at the threshold covered a range of 8625 to 8715 Å for the various diodes. A block diagram of the frequency stabilizing equipment is given. The authors thank V.V. Nikitin for his comments and Yu.P. Zakharov for preparing the lasers.

2/2

- 35 -

AA0046988- Goncharov, I.K. UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent, 2/70

244507 MINIATURE VARIABLE CAPACITOR has stator plates which are covered on both sides by a solid dielectric film, except at the end where the connections are made. The films protrude over the metal plates where the rotor plates enter and are joined to form a leading edge. To eliminate electrostatic noise and reduce the absorption of moisture, a lubricant in the form of a molecular layer of polymethyl siloxane is applied to the surfaces of friction between the plates.

10.6.66 as 1081828/26-9. M.M.BELAYEV et al. (7.10.69)  
Bul 18/28.5.69. Class 21g. Int.Cl. H 01 g.

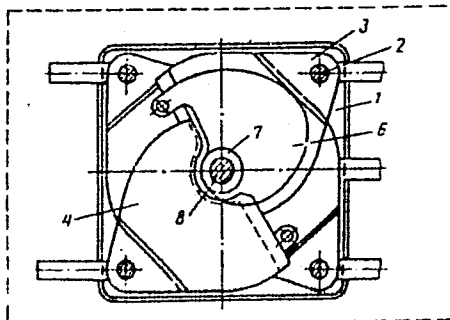
4

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19790394

AA0046988

AUTHORS: Belvayev, M. M.; Vinogradova, T. F.; Goncharov, I. K.; Zamyatin, V. N.;  
Shcherbina, V. O.; Fridman, Ye. I.; El'kun, N. Ya.; Yerastova, V. I.



19790395

USSR

UDC: 538.244.2+537.312.62

GONCHAROV, I. N., Joint Institute of Nuclear Research

"A Multisectional Superconducting Solenoid"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 3, Jan 71, Author's Certificate No 291255, Division H, filed 21 Jun 68, published 6 Jan 71, p 133

Translation: This Author's Certificate introduces: 1. A multisectional superconducting solenoid in which the difference between the maximum and minimum magnetic induction in each section is less than a predetermined quantity. As a distinguishing feature of the patent, the number of independent sections and connections between superconductors is reduced by placing each section of the solenoid in a region bounded by predetermined surfaces of equal magnetic induction in the body of the winding. 2. A modification of this solenoid distinguished by the fact that the boundaries of the sections are stepped. 3. A modification of this solenoid distinguished by the fact that the steps of the sections are formed by foil inserts made from a material with high electrical and thermal conductivity. These inserts are wrapped around the solenoid, notched at the edges and bent back so that the turns of the winding remain motionless during formation of a step.

1/1

- 42 -

PHYSICS

Acoustics

USSR

GONCHAROV, K. V., MAL'TSEVA, I. V., and SAVITSKIY, Ye. M., Moscow State University

"Study of Critical Phenomena in a Holmium Single Crystal Close to the Néel Temperature by Ultrasonic Methods"

Leningrad, Fizika Tverdogo Tela, No 12, Dec 71, pp 3700-3702

Abstract: The absorption and speed of ultrasound in Ho single crystals close to the Néel temperature were measured. The attenuation of sound was measured by the echo-pulse method, and a precision phase-pulse method was used to measure phase velocity. The absolute error of measurement in the speed of sound did not exceed 0.01%, and the error in the attenuation did not exceed 5%. The absolute error of measurement of temperature was 0.5%, and the relative error of measurement was not more than 0.02°. The Ho single crystal was grown by recrystallization annealing and was oriented along the a and c axes with a deviation of not more than 1°. Figures are given showing the measured values of the variation, with temperature, of the velocity  $(v - v_0)/v_0$  and the attenuation  $\alpha$  of longitudinal sound at a frequency of 20 MHz, where  $v_0$  is the speed of sound at room temperature. It is concluded

1/2

USSR

GONCHAROV, K. V., et al., Fizika Tverdogo Tela, No 12, Dec 71, pp 3700-3702

that Ho is an isotropic antiferromagnetic, in view of the smallness of the anisotropy factor, despite its complex spiral structure.

2/2

- 37 -

1/2 056 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--VISCOELASTIC PROPERTIES OF A POLYMER BINDER -U-

AUTHOR--(03)-YAKOVLEV, G.A., GONCHAROV, L.P., GURSKIY, N.G.

COUNTRY OF INFO--USSR

SOURCE--PRIKL. MEKH. 1970, 6(1), 57-61

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR, PROPULSION  
AND FUELS  
TOPIC TAGS--VISCOELASTICITY, POLYMER BINDER, PLASTIC MECHANICAL PROPERTY,  
EPOXY RESIN, LAMINATED PLASTIC, GLASS FABRIC, TEST METHOD, ROCKET  
ENGINE, VIBRATION TEST, PARAMETER/(U)ED6 EPOXY RESIN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1995/1302

STEP NO--UR/0198/70/006/001/0057/0061

CIRC ACCESSION NO--AP0116762

UNCLASSIFIED

2/2 056

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0116762

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE STRESS DEFORMATION CHARACTERISTICS WERE DETD. OF EPOXY RESIN ED-6 UNDER THE DYNAMIC AND QUASI STATISTICAL TESTING CONDITIONS. THE PARAMETERS OF THE EQUATIONS  $\Omega = A \tau$ ;  $\tau = A \tau$  (J. D. FERRY, 1963) WERE DETD. FROM THESE DATA THE TEMP. DISTRIBUTION IN ED-6 RESINS (USED AS BINDERS FOR GLASS CLOTH LAMINATES) SUBJECTED TO VIBRATIONS, SUCH AS OCCUR IN ROCKET ENGINES, CAN BE PREDICTED. FACILITY: INST. MEKH., KIEV, USSR.

UNCLASSIFIED

GONCHAROV L.P.

Acc. Nr.: AP0042645Ref. Code: UR0203

IPRS 50162

Daytime Variations in Electron Concentration in Equatorial Ionosphere

Diurnal variations in the critical frequencies of the F2 layer ( $S_f$ ) in the equatorial region have a clearly expressed minimum during the midday hours in the region of the magnetic equator. In the range of latitudes  $\pm 10^\circ$  there is a characteristic "two-hump" shape of the  $S_f$  curve. Between  $10$  and  $20^\circ$  in the northern and southern hemispheres a  $S_f$  curve with one afternoon maximum is typical in both the northern and southern hemispheres. This paper examines some characteristics of the diurnal change in electron concentration at fixed levels  $N_h$  below the maximum of the F2 layer on the basis of  $N(h)$  profiles of the ionosphere obtained using observational data obtained on the schooner "Zarya" during December 1962, January 1963 and November 1960 near the equator. During the illuminated hours the curves of diurnal variation  $N_h(S_N)$  change singularly both with latitude and with altitude. The diurnal changes in  $N_h$  are clearest and have the least scatter at the magnetic equator; here the principal characteristics of change in  $S_N$  with altitude are manifested most clearly. The daytime minimum near the maximum of the F2 layer has the greatest depth here and falls at the midday hours. The  $S_N$  curves are symmetrical both with respect to the temporal position of the maxima relative to the center of the minimum and with re-

Reel/Frame  
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AP0042645.

spect to the small difference in  $N_h$  values at the maxima. The  $S_N$  curves at geomagnetic latitude  $10^\circ S$  for 8 November 1960 and 3 January 1963, for example, show a clearly expressed peak in  $S_N$ . Near the maximum of the F2 layer a "two-hump" shape of  $S_N$  occurs not only in those cases when the  $S_f$  curve has a similar shape, but also when the latter is characterized by a single maximum. The shape of  $S_N$  changes with altitude and the changes are most sharply expressed for the region near the maximum of the F2 layer. Below the 150-170 km level it is most common to observe a "regular" shape of  $S_N$ , symmetrical relative to the maximum at midday. A significant minimum begins to appear at great altitudes, attaining a maximum value at an altitude of 250 km and above. The shape of  $S_f$  changes rapidly with latitude in the equatorial zone. A similar picture is observed for  $S_N$  at levels near the maximum of the F2 layer. For latitudes where there is a predominance of the afternoon peak in the region of the maximum of the F2 layer, in the lower part of the F region (180-240 km) the  $S_N$  curves have a pre-midday maximum. With an increase in altitude an afternoon maximum appears in  $S_N$ . At altitudes below 150-200 km the daytime changes in N are evidently determined for the most part by photochemical processes, indicating a good

1/3

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correlation between electron concentration and solar altitude.

(Abstract: "Some Characteristics of Variations in Electron Concentration in the Equatorial Ionosphere During Daytime," by L. P. Goncharov and L. A. Shchepkin, Institute of Terrestrial Magnetism, Ionosphere and Radio Wave Propagation and Siberian Institute of Terrestrial Magnetism, Ionosphere and Radio Wave Propagation; Moscow, Geomagnetizm i Aeronomiya, Vol X, No 1, 1970, pp 141-143)

19760705

USSR

UDC: 621.375.9:535

BEREZOVSKIY, V. V., BYKOVSKIY, Yu. A., GONCHAROV, M. I., REZ, I. S.

"Coefficients of Nonlinear Polarization of Proustite and Tellurium"

Moscow, Kvantovaya Elektronika, Sbornik Statey, No 2(8), 1972, pp 105-107

Abstract: Measurements are made of the effective coefficients of nonlinear polarization  $d_{31} \sin \theta_m + d_{22} \cos \theta_m$  with pumping propagation in the positive crystallographic quadrant, and the coefficient of nonlinear polarization of tellurium  $d_{11}$  with regard to the width of the pumping spectrum (10.6  $\mu\text{m}$ ). Pumping was done by a  $\text{CO}_2$  laser in single-mode operation with Q-switching. The authors thank S. S. Shalyt and I. I. Farbshteyn for furnishing the high-quality tellurium specimens. Bibliography of twelve titles.

1/1

USSR

UDC 621.762.2(088.8)

PATYUKOV, G. M., ROMANOV, A. I., BARANOV, M. N., BUTORIN, N. I., KHROMENKO, G. S., GONCHAROV, M. T., and SAGUNOV, T. M., Noril'sk Mining and Metallurgical Combine Invent A. I. Zavenyagin

"Electrolyzer for Making Metal Powder"

USSR Authors' Certificate No 267080, Cl. 40c, 1/02; 40c, 5/00, (C 22d), filed 21 Feb 67, published 23 Jan 70 (from RZh-Metallurgiya, No 3, Mar 71, Abstract NO 3G405F)

Translation: The electrolyzer contains a bath, anodes, disk cathodes fastened on a shaft, current supply unit, and drive mechanism. In order to decrease power consumption and increase dependability of electrolyzer operation, the drive mechanism is supplied with a toothed rack, which engages with the gear that is fixed on the shaft with the cathodes and imparts to the cathodes a reciprocating motion along the path of a pendulum. The contact at the point of the current supply to the shaft by the cathodes is made to be fixed. One illustration.

1/1

- 29 -

USSR

GONCHAROV, N. P., Kustanay Oblast Sanitary Epidemiological Station

"The Effect of Green Plantings on Microclimatic Conditions in Kustanay"

Alma Ata, Zdravookhraneniye Kazakhstana, No 4, 1971, pp 13-14

Abstract: The ambient temperature was measured at various places in the Soviet Central Asian city of Kustanay -- inside gardens, close to and at some distance from tree stands -- at 0900, 1200, 1500, 1800, 2100, and 2400 hours from 1 to 31 July. At 1200 and 1500 hours, for examples, the temperature 1.5 m above the ground in gardens and parks was found to be 0.5 to 1.4° lower than in paved areas. However, the relative humidity was 2 to 4% higher in the same places. At night the trees and shrubbery had no significant effect on the temperature. Among other measures for mitigating the severe summer heat of Kustanay, the author recommends increasing green plantings to 40 to 50 m<sup>2</sup> per person (from the existing 11.6 m<sup>2</sup>).

1/1

- 84 -

Pathology

UDC 616.988.7-092.9-07:616.453.-008.6-07

USSR

GONCHAROV, N. P., VERBERGER, K., SHUBERT, K., and SHEVTSOVA, Z. V., Institute of Experimental Pathology and Therapy, Academy of Sciences USSR, and Institut e of Microbiology and Experimental Therapy, German Academy of Sciences (Jena)

"Secretory Function of the Adrenal Cortex in Macaques With Monkey Hemorrhagic Fever"

Moscow, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 2, 1971, pp 31-37

Abstract: Forty compounds were isolated from the adrenal blood of healthy and sick rhesus monkeys. Thirteen of these were steroid hormones identified by infrared spectrography: hydrocortisone, aldosterone, corticosterone, 17-alpha-hydroxyprogesterone, 17-hydroxy-11-desoxycorticosterone, steroid-lactone (11 $\beta$ , 18-dihydroxy-4-androsten-3-one-17 $\beta$ -acids lactone 20  $\rightarrow$  18), dehydroepiandrosterone, 7-ketodehydroepiandrosterone, androstenedione, 11 $\beta$ -hydroxyandrostenedione, adrenosterone, pregnenolone, and progesterone. Hemorrhagic fever induced by inoculating the animals with the Sukhumi-64 strain of the virus sharply impaired the secretory function of the adrenal cortex. The degree of impairment was determined by the severity of the infection. The secretion of aldosterone and corticosterone increased in all stages of the

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USSR

GONCHAROV, N. P., et al., Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, No 2, 1971, pp 31-37

disease while that of hydrocortisone decreased sharply. The glucocorticoids are known to play a major role in the nonspecific defensive reactions of the body. Hence, inhibition of the biosynthesis of the most active glucocorticoid, hydrocortisone, in the severely ill monkeys helped to lower their general resistance, thus aggravating the course of the disease.

2/2

- 58 -

GODCHAROV, D. N.

oceanography

POSSIBILITY OF UTILIZING MODERN SELF-CONTAINED BUOY STATIONS FOR OCEANOGRAPHIC RESEARCH IN STRONG CURRENT AREAS

Article by candidate of Technical Sciences A. S. GODCHAROV, Head of Laboratory, Director of Oceanographic Sciences L. N. Davidkin, L. N. Yezhovskiy, Candidate of Oceanographic Sciences Yu. V. Shtromov, Central Scientific Research Institute of the Ministry of Defense, State Oceanographic Institute, Moscow, Nefteproklyadnaya Street, No. 11, 1972, submitted 13 June 1972, pp 67-74

UDC 551.40.08:627.913

The results are discussed from calculations and simulation testing to determine the hydrodynamic and weight loads experienced by self-contained buoy stations in deep-water strong current zones of the ocean. The flow velocities were established at which it is possible to install GN-31 and BS-6000 buoy stations. Recommendations are made with respect to the development of self-contained buoy stations for strong-current areas.

Beginning in 1960, the method of measuring currents by installing self-contained buoy stations began to be introduced into the practice of oceanographic operations of the institutions of the hydrometeorological service. In the initial step, the buoy stations were assembled from nonstandard equipment using BS-720 type buoys (lifting capacity 650 kg with a mass of 417 kg) and "pinch" type buoys (lifting capacity 2,000 kg with a mass of 1,500 kg) or homemade buoys made of metal and foam plastic with a lifting capacity of 1,000-1,500 kg.

In the middle of the 1960's, a definite amount of experience had already been accumulated which permitted the development and gradual introduction of more modern designs of self-contained buoy stations into practice (GN-46, GN-47, GN-49, GN-50, and GN-51). These buoys were designed for taking oceanographic measurements in areas with different depths. Procedural instructions with respect to working with the self-contained buoy stations were published simultaneously. The measurements of the oceanological characteristics on the self-contained buoy stations permitted broad information to be obtained on the currents which contributed greatly to the precision of definition of our concepts of the dynamic processes taking place in the oceans and seas.

USSR

UDC 62.52

GONCHAROV, R.V., RASSHCHETLYAYEV, YU.S.

"Pulse Correcting Filter"

Izv. VUZ: Elektromekhanika, No 3, Mar 1972, pp 317-323

Abstract: The proposed pulse correcting filter can be used for correction of automatic control systems operating on a carrier frequency, and also those using nonmodulated signals. In the range of the ratios of the frequencies of the carrier and envelope significant in practice, the filter has phase-leading properties. During its use for conversion on nonmodulated signals, the filter performs the function of a modulator. Furthermore, the additional possibility appears of obtaining more complex laws of conversion by control of the frequency of the switching voltage. 4 fig. 2 ref. Received, 27 Oct 1970.

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- 111 -

USSR

LOBANOV, G., ~~GONCHAROV, V.~~ TRET'YAKOV, YE., Journal Correspondents

"Reservoir on the Kuban'"

Moscow, Gidrotekhnika i melioratsiya, No. 12, Dec 71, pp 4-18

Abstract: The Krasnodar Reservoir was built to equalize the flow of the Kuban' River which changes by a factor of 20 over a year, from 100 to 2,000 m<sup>3</sup>/sec. The basic dam is located at the eastern boundary of Krasnodar. This dam and the high right bank of the Kuban' form the basin of the dam. Its capacity is 3100 million cubic meters and the area is 40,000 hectares. At the present time 600,000 hectares are under constant flooding. The dam ensures a stable water supply for the fishing industry and improves shipping conditions on the Kuban'. The story of the construction of the reservoir is given.

1/1

- 25 -

USSR

UDC 621.373:535

GONCHAROV, V. A., ZVEREV, G. M., MARTYNOV, A. D.

"Effect of Triplet Levels on the Energy Characteristics of Lasers Using Xanthene Dye Solutions Excited by a Laser with Mode Synchronization"

Leningrad, Optika i Spektroskopiya, No 1, 1972, pp 218-219

Abstract: This brief communication deals with the radiation amplitude of lasers using xanthene dye solutions and the pumping of a pulse laser with synchronization of modes, as a function of time. As with pumping by light pulses, the accumulation of molecules in triplet state, especially for solutions with low fluorescence quantum output, leads to losses in transformation efficiency in the pumping process and to premature breaks in the radiation. The laser used in the experiments described in the communication consisted of a solution-filled chamber with plane-parallel walls and a mirror with a reflection coefficient of about 100% at the wavelength generated by the dye; the duration of the pumping was less than the lifetime of the molecules in the first excited singlet state, the interval between pumping dosages being much

1/2

- 110 -

USSR

GONCHAROV, V. A. et al, Optika i Spektroskopiya, No 1, 1972,  
pp 218-219

larger than the lifetime of phonons in the resonator, which was 1.5 cm long. The authors find that the transition of the excited molecules in the triplet state is a fundamental process affecting the efficiency of the dye laser. A diagram of the experimental equipment is given.

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Acc. Nr:

AP 0101483

Abstracting Service:

CHEMICAL ABST. 6-70

Ref. Code:

UR 0079

121653k Reactions of tetracyclohexyltin. Razuvaev, G. A.; Domrachev, G. A.; Kochetikhina, K. G.; Goncharov, V. A. (USSR). *Zh. Obshch. Khim.* 1970, 40(2), 325-7 (Russ). Pyrolysis of  $(C_6H_{11})_4Sn$  at  $250^\circ$  gave mainly cyclohexane and cyclohexene, metallic Sn, and H in 12% conversion; at  $300^\circ$  traces of methylcyclopentene and dicyclohexyl were also formed and some tar formation was obsd., while at  $350^\circ$  more cyclohexane and less cyclohexene were formed, the other product yields being comparable to those above. Reaction in the presence of  $Et_3NH$  gave more cyclohexane and less cyclohexene than were obtained without the added amine at  $250^\circ$ , but at  $350^\circ$  the yield of cyclohexane was lower and that of cyclohexene was higher than were obtained without the amine. Other product yields were comparable to those above. In the presence of  $(CH_2OH)_2$  the yield of cyclohexane was raised, that of cyclohexene lowered considerably, and other product yields were comparable to those above, while some  $(SnO_2CCl_2O)_n$  was also formed. Thus, the disproportionation of the free radical intermediates increases with the temp. rise, while the  $\beta$ -elimination reaction is inhibited by the higher temp. The effect of the added amine is ascribed to coordination of it with the  $\beta$ -H atom (with respect to the Sn atom) of the cyclohexyl group. Thus, donor reagents in reaction with this  $R_4Sn$  exhibit their nucleophilic nature in the 1st step, then react as acids or as bases. G. M. Kosolapoff

REEL/FRAME

19851389

1/2 016 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--SONOLUMINESCENCE OF AQUEOUS SOLUTIONS OF SUCROSE AND GLYCEROL -U-  
AUTHOR-(02)-GOLUBNICHIIY, P.L., GONCHAROV, V.D.  
COUNTRY OF INFO--USSR  
SOURCE--AKUST. ZH. 1970, 16(11), 142-5  
DATE PUBLISHED-----70  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--LUMINESCENCE, AQUEOUS SOLUTION, SUCROSE, GLYCEROL  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--2000/2262 STEP NO--UR/0046/70/016/001/0142/0145  
CIRC ACCESSION NO--AP0125840  
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--27NOV70

2/2 016

CIRC ACCESSION NO--AP0125840

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. LUMINESCENCE DUE TO ULTRASOUND CAVITATION IS STUDIED WITH A DEVICE DESCRIBED EARLIER (1969). THE EFFECT OF TEMP. AND OF CONCN. OF SUCROSE OR GLYCEROL ON THE LUMINESCENCE INTENSITY (I) WAS STUDIED AND COMPARED WITH THE VISCOSITY OF THE SOLNS.; THE EFFECT OF TRACE H SUB2 O IS POINTED OUT. A RELATION WAS FOUND BETWEEN I AND THE COMPRESSIBILITY (BETA):  $\log(I \text{ SUBS}-I \text{ SUBO})$  EQUALS  $\text{BETA SUBO}-\text{BETA SUBS MINUS } 1$  (S AND O REFER TO SOLN. AND PURE WATER VALUES, RESP.).

FACILITY: INST. YAD. FIZ., NOVOSIBIRSK, USSR.

UNCLASSIFIED

I/2 016 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--BLAST FURNACE SMELTING USING BRIQUETTED COKE -U-  
AUTHOR--(05)--NEKRASOV, Z.I., KOTOV, K.I., GLADKOV, N.A., GONCHAROV, V.F.,  
ZHEMBUS, M.D.  
COUNTRY OF INFO--USSR  
SOURCE--MET. GORNORUD. PROM. 1970, (1), 3-5  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS  
TOPIC TAGS--BLAST FURNACE, COKE, PIG IRON, BRIQUETTING, MECHANICAL  
STRENGTH  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3005/0914 STEP NO--UR/0383/70/000/001/0003/0005  
CIRC ACCESSION NO--AP0133003  
UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0133003

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. FOR THE EXPTL. SMELTING IN A BLAST FURNACE, A CHARGE CONTG. 10PERCENT BRIQUETTED COKE WAS USED. THE COKE SHOWED MECH. STRENGTHS, M SUB40 EQUALS 85-93PERCENT, M SUB10 EQUALS 3.4-8.8PERCENT, AND CONTAINED S 1.25-1.80, ASH 5.81-10.6, AND MOISTURE 5.8-10.6PERCENT. THE PROCESS PARAMETERS OBTAINED WERE COMPARED WITH THOSE OBTAINED WITH THE USE OF THE USUAL COKE. THE PIG IRON PRODUCED SHOWED NORMAL MN AND S AND SOMEWHAT HIGHER SI CONCNS. (0.81, 0.040, AND 0.92PERCENT, RESP.). THE BRIQUETTED COKE ON CHARGING SHOWED SUFFICIENT STRENGTH AND DID NOT FORM A BREEZE. THE LENGTH OF THE OXIDIZING ZONE IN THE FURNACE WAS 1000 MM, AND CO DISAPPEARED AT 250-500 MM FROM THE MOUTH OF TUYERE. MAX. TEMPS. IN THE HEARTH AND BOSH WERE 1845 AND 1380DEGREES, RESP., AND THOSE OF THE PIG IRON AND SLAG AT THEIR TAP HOLES WERE 1515 AND 1580DEGREES, RESP. A CHARGE CONTG. 50PERCENT BRIQUETTE COKE DOES NOT CAUSE ANY COMPLICATIONS IN THE OPERATION OF THE FURNACE.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--02OCT70  
TITLE--INTERACTION OF SULFUR COMPOUNDS OF COAL WITH SOME MINERAL  
SUBSTANCES DURING THERMAL BREAKDOWN -U-  
AUTHOR--(04)-BRUK, A.S., KUTOVOY, P.M., GONCHAROV, V.F., BEZBAKH, ZH.I.

COUNTRY OF INFO--USSR

SOURCE--KHIM. TVERD. TOPL. 1970, (1), 66-70

DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, MATERIALS, MECH., IND.,  
CIVIL AND MARINE ENGR  
TOPIC TAGS--SULFUR, COAL, BLAST FURNACE, COKE, IRON, QUALITY CONTROL,  
CALCIUM COMPOUND, CHEMICAL SEPARATION, HYDROGEN SULFIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1989/0756

STEP NO--UR/0467/70/000/001/0066/0070

CIRC ACCESSION NO--AP0107298

UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--02OCT70  
CIRC ACCESSION NO--AP0107298  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DECREASING THE S CONTENT IN BLAST FURNACE COKE MAY IMPROVE THE IRON QUALITY. WEST DONETSK COAL, EASILY SINTERING, CONTG. 2.64PERCENT S AND 39.4PERCENT VOLATILES, WAS TREATED VARIOUSLY WITH  $\text{SiO}_2$ , FE, AND A MAGNETITE CONC., CONTG. 69PERCENT FE, PARTLY AS  $\text{FeO}$ . THE S CONTENT IN THE INITIAL MIXTS., IN THE INTERMEDIATE PRODUCTS OF CONTINUOUS COKING, AND IN THE RESULTING COKE ARE PLOTTED. MAX. FORMATION OF  $\text{H}_2\text{S}$  PROCEEDED THROUGH THE STEPS OF RAPID HEATING AND ISOTHERMAL THERMAL TREATMENT UNDER THE ACTION OF HIGHLY ACTIVE H. ALL ADDITIVES EXCEPT FE FACILITATED THE GASIFICATION OF S BEFORE CALCINING, WHILE AFTERWARDS CHIEFLY NONVOLATILE S COMPOUNDS WERE FORMED. USE OF HIGH-S COALS FOR PREPN. OF BLAST FURNACE COKE IS POSSIBLE ONLY WHEN THE COALS ARE EASILY SINTERING. ADDN. OF CA COMPOUNDS INCREASED THE AMT. OF S REMAINING IN THE COKE, BUT IN THE FORM OF GAS, WHICH WAS NOT DETRIMENTAL TO IRON QUALITY.

UNCLASSIFIED

USSR

UDC 518.517.949.12

OSIPOV, V. M., ~~GONCHAROV, V. I.~~, MOLODYKH, V. A., and CHUDINOV, V. N.

"Approximation of Complex Transfer Functions by Interpolation"

Dokl. Yubileyn. nuach.-tekhn. konferentsii Fak. avtomat. sistem. Tomsk. politekhn. in-t (Reports of the Anniversary Scientific-Technical Conference of the Faculty of System Automation of the Tomsk Polytechnic Institute), Tomsk, 1970, pp 263-268 (from Referativnyy Zhurnal -- Matematika, No 8, Aug 71, Abstract No 8B775 by I. Shelikhova)

Translation: In analog computer investigations of automatic control systems of processes with distributed parameters, complex transfer functions must be approximated by fractionally rational expressions. A method of finding the coefficients of such approximating expressions by interpolation is presented for the case of processes with distributed parameters that have monotonic or near-monotonic transfer characteristics, which are approximated by exponents with a high degree of accuracy. The increase in approximation accuracy is due to the increase in the order of the approximating expression. Results of approximating transfer functions of the lag component are discussed.

1/1

- 36 -

ГОНЧАРОВ, В.К.

КМД / 12.760/5-АРР-73  
Док. 72.

85

Goncharov, V. K., A. N. Loparev, and L. Ya. Min'ko.  
Self-igniting pulsed optical discharge in an erosive laser  
plasma. ZhETF, v. 62, no. 6, 1972, 2111-2114.

A variant on the optical plasmatron is described in which a self-igniting optical discharge is obtained from irradiation of a target surface. The technique was to defocus the incident beam such that the focal point was several millimeters above the target surface; vapor products from the surface, traveling at about 100 m/sec, would ignite on reaching the focal point and provide a "hanging" optical discharge for the remainder of the laser pulse. The experiment cited used an Nd glass laser at 1.5  $\mu$ s pulsewidth and generating relatively low surface intensities on the order of  $10^6$  w/cm<sup>2</sup>. Various metals and dielectrics were tested as target materials, including ebonite, textolite, brass and a type POS-40 alloy. Depending on the material, a stable discharge was achieved in a 10 - 20 mm range above the target surface; spectral studies show discharge temperatures  $\approx 22,000^\circ\text{K}$ . Streak photos of the discharge development are given; Fig. 1 shows one form of the discharge.

ГОНЧАРОВ, В.К.

200/18.060/5.000-13 91  
200-12

Balanov, V. A., V. K. Goncharov, and L. Ya. Min'ko.  
Powerful optical laser-plasma. ZhPS, v. 16, no. 5,  
1972, 931-934.

A versatile laser-driven plasmatron is described which may be compared to the one described previously by Goncharov et al in this report. In the present design the simple chamber shown in Fig. 1 was used to

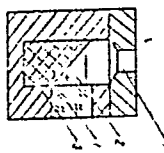


Fig. 1. Laser plasmatron  
1 - quartz window; 2 - chamber;  
3 - target material; 4 - exit nozzle

Generate a plasma jet from any given target material, with the plasma driven out through the nozzle by generated pressure. By varying pulse parameters, chamber dimensions, fill gas, etc., a wide range of plasma jet characteristics can be obtained, ranging from subsonic to supersonic. The authors used an Nd glass laser at 0.8 millisecond pulses of 5 kJ peak energy, in a quasi-cw regime, to develop target surface densities on the order of  $10^6 \text{ w/cm}^2$ . Glass textile was used as target material, and helium at pressures from  $5 \times 10^{-2}$  ton to several atmospheres served as the fill gas. The many possible variations in jet parameters are discussed and both high-speed and streak photos are given of jet propagation. Table 1 compares results of two modes. The results generally show the versatility of this type of low temperature plasmatron.

USSR

UDC 621.382.2

~~GONCHAROV, V. N.~~, KLYUCHNIKOV, V. N., KRYLOV, L. N., LAVRISHIN, Yu. A.,  
LONCHIN, M. A., SEREZHKIN, Yu. N., UCHAYKIN, I. G., and YAMASHKIN, Yu. M.

"Role of Microplasma Phenomena in Determining the Properties of Silicon  
Avalanche Rectifiers"

Uch. zap. Mordovsk. un-t (Scientific Notes of Mordovskiy University), 1970,  
Issue 82, pp 3-20 (from RZh-Elektronika i yeye primeneniye, No 8, August 1971,  
Abstract No 8B195)

Translation: The effect of microplasma phenomena on the characteristics of avalanche rectifiers is considered. A model of the microplasma is presented and the reasons for formation of microplasm are considered. The distribution of microplasm in avalanche rectifiers is presented for the area of the p-n junction and for breakdown voltages. Means are considered for an increase of the breakdown energy of avalanche rectifiers. Summary.

1/1

USSR

UDC: 621.382.032.27

SANDULOVA, A. V., GONCHAROV, V. P., SYDIR, B. I., and RYBAK, V. M.

"Ohmic Contacts for GaSb Monocrystals"

Moscow, Priory i tekhnika eksperimenta, No 4, July-August, 1972, pp 216-218

Abstract: This paper describes a practical method for welding ohmic contacts to n and p type monocrystals of GaSb. The device used in this method is a little stand with a self-contained oven which keeps the flux, under the surface of which the welding is done, molten. To avoid strong local heating, which leads to the formation of acceptor impurities and the consequent reduction in quality of the contact, the crystal is given preliminary heating to 300° C. The contacts used for the p-type crystal were gold wires measuring 30 microns in diameter. A diagram and description of the stand is given together with such details as the method of reducing the contact resistance. A photograph of the contact welds is reproduced, and the volt-ampere characteristic of the ohmic contact, showing its perfect linearity, is plotted. The authors are associated with the Lvov Polytechnical Institute.

1/1

- 181 -

USSR

UDC 615.285.7-099-07

VATUTIN, N. T., GONCHAROV, V. P., and MALYUTINA, L. M., Rudnichnaya Hospital

"A Case of Acute Chlorophos Poisoning"

Kiev, Vrachebnoye Delo, No 9, 1971, pp 140-141

Abstract: A 44-year-old man accidentally swallowed 30 mg of a concentrated solution of the organophosphorus insecticide chlorophos and within 10 min developed nausea, vomiting, weakness, and vertigo. He was brought to the hospital unconscious. After gastric and intestinal lavage with 2% salt solution and bleeding, he received intravenously 40% glucose, strophanthin, atropine, cordiamine, hydrocortisone and subcutaneously cytiton [a stimulant used in the treatment of respiratory disorders] and ephedrine. The medication restored consciousness within 3 hours, reduced dyspnea, and elevated arterial pressure to 110/70 mm Hg. Subsequent treatment included the administration of atropine intravenously and subcutaneously, daily intravenous injections of a mixture consisting of physiological saline, theophylline, and strophanthin, and intramuscular injections of hydrocortisone and vitamins B<sub>1</sub>, B<sub>6</sub>, B<sub>12</sub>, C, penicillin, and neomycin. The patient was discharged in satisfactory condition after 2 weeks in the hospital.

1/1

USSR

UDC 681.333

G  
GONDAREV, V. P., Taganrog Radiotechnical Institute

"A Device for Conversion of the Probability Distribution Functions of Random Number Sequences"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 8, 1970, p 120, patent No 264003, filed 8 Jul 68

Abstract: This Author's Certificate introduces a device for conversion of the probability distribution functions of random number sequences with respect to the operation of addition. The unit contains coincidence circuits, flip-flops, shift registers, a merging circuit, and inverters. As a distinguishing feature of the patent, the unit is speeded up and simplified by connecting the inputs corresponding to binary number sequences to the inputs of the shift registers and, both directly and through inverters, to the inputs of the coincidence circuits. The outputs of the coincidence circuits are connected respectively to the reset and set terminals of the flip-flop, while the zero-output and ones-output of the flip-flop are connected to the set and reset terminals of another flip-flop through coincidence circuits

1/2

USSR

GONDAREV, V. P., et al., Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 8, 1970, p 120, patent No 264003, filed 8 Jul 68

whose controlling inputs are connected to the pulse transfer input. The zero-output and ones-output terminals of this flip-flop are connected to the inputs of coincidence circuits whose other inputs are connected to the outputs of the shift registers, while the outputs of these same coincidence circuits are connected to the output of the device through the merging circuit,

2/2

1/2 022 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--INTENSIFICATION OF CALCINING -U-

AUTHOR-(02)-GONCHAROV, V.P., DOBROVOLSKAYA, N.K.

COUNTRY OF INFO--USSR

SOURCE--TSEMENT 1970, (2), 10-11

DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY, MATERIALS

TOPIC TAGS--CALCINATION, CLAY, ALUMINATE, WEAR RESISTANCE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FAME--1996/1984

STEP NO--UR/0101/70/000/002/0010/0011

CIRC ACCESSION NO--AP0118943

UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0118943

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF HIGH ALUMINATE CLAY ADDNS. ON THE GRANULATION OF RAW MATERIALS WAS STUDIED. THE GRANULES PREPD. FROM RAW MATERIAL HIGH IN AL OXIDES HAVE BETTER POROSITY, MECH. STRENGTH, FRACTIONAL COMPN., AND HEAT RESISTANCE. THE RESISTANCE OF DRY GRANULES AGAINST WEAR IN BOTH MIXTS. IS APPROX. EQUAL, BUT THE GRANULES PREPD. WITH HIGH ALUMINATE CLAYS AND CALCINED AT 600 AND 1000DEGREES HAVE HIGHER WEAR RESISTANCE. DRYING OF MOIST GRANULES IS IMPROVED IF THE GRANULES ARE PREPD. WITH 5PERCENT HIGH ALUMINATE CLAYS. CALCINATION OF SUCH GRANULES AT 1000DEGREES CAUSED CRACK FORMATION IN THE SURFACE LAYER ONLY, GRANULES WITHOUT ADDN. WERE COMPLETELY DESTROYED. THE GRANULES WITH 5PERCENT HIGH ALUMINATE CLAYS MADE IT POSSIBLE TO INTENSIFY THE CALCINATION PROCESS, IMPROVE THE AERODYNAMIC AND THERMOTECH. OPERATION CONDITIONS OF THE FURNACES AS WELL AS THE MINERALOGICAL COMPN. OF THE CLINKER. THEIR .CONTENT OF 3CAO.AL SUB2 O SUB3 WAS RAISED. THE OUTPUT OF THE FURNACES ATTAINED 35 TONS-HR AND THE FUEL CONSUMPTION WAS DECREASED. FACILITY: LIPETSK. TSEMENT. ZAVOD, LIPETSK, USSR.

UNCLASSIFIED

HA0040731

UR 0482

Soviet Inventions Illustrated, Section I Chemical, Derwent, 3-70

235866 ROLLS FOR TUBE ROLLING MILLS are manufactured with a high wear resistance on the surface and a good gripping power by hard-facing the working surface with a layer of high-carbon steel. This is annealed, by not allowing the fused metal to cool below 350°C, to a granular perlite structure with a Brinell hardness of 150-200. 3.10.66. as 1108992/25-27. V.N.GLUSHKOV et al. (12.6.69.) Bul.6/24.1.69. Class 21h. Int.Cl. B33k.

AUTHORS: Glushkov, V. N.; Goncharov, V. P.; and Ust'yantsev, V. P.

19750388

USSR

UDC 534.222

BREKHOVSKIKH, L. M., GONCHAROV, V. V., and GOSTEV, V. S., Acoustics  
Institute of the USSR Academy of Sciences

"Some Problems of Sound Radiation by Waves Propagating Along Curvilinear  
Boundaries"

Moscow, Akusticheskiy Zhurnal, Vol 16, No 1, 1970, pp 25-31

Abstract: Nonlinear interaction of surface waves existing along the curvilinear boundary of a liquid is considered. It is shown that under certain conditions a sound wave is propagated whose amplitude at large distances from the boundary greatly exceeds the amplitude of linearly excited waves. Detailed calculation was made for cylindrical and spherical surfaces. It is possible that this effect accounts for the breakdown of the jets and drops of liquid observed in several experiments. A method is proposed which makes it possible to extend results to the case of an arbitrary convex surface with a smoothly changing curvature. The theory set forth can prove useful in calculating the noise produced by a vibrating surface.

Let us assume a convex closed surface  $S_0: r = r_0(u, v)$ ,  $r \equiv \{x, y, z\}$ .  
It divides the space into two regions: external and internal. One of the

1/2

USSR

BREKHOVSKIKH, L. M., et al., Akusticheskiy Zhurnal, Vol 16, No 1, 1970, pp 25-31

regions is filled with a medium with a constant speed of sound and with the density of the unperturbed state  $\rho$ . As  $S_0$ , boundaries of two types are considered: liquid-vacuum interface and a thin elastic membrane bounding a liquid or gas. Then let there be propagated further along the surface  $S_0$  waves whose length is less than the wavelength of sound in the medium, such that their amplitude quite rapidly dies away at increasing distance from  $S_0$ . These waves will be referred to as surface waves in contrast with waves having a constant or slowly attenuating amplitude, referred to as sound waves. The problem is then to find the parameters of the sound wave propagated by the interacting surface waves.

2/2

1/3 027 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--SOME PROBLEMS OF SOUND RADIATION BY WAVES PROPAGATING ALONG  
CURVILINEAR BOUNDARIES -U-  
AUTHOR-(03)-BREKHOVSKIY, L.M., GONCHAROV, V.V., GOSTEV, V.S.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, AKRUSTICHESKIY ZHURNAL, VOL 16, NO 1, 1970, PP 25-31

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ACOUSTIC PROPAGATION, NONLINEAR EFFECT, SURFACE WAVE, ACOUSTIC  
DAMPING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--1988/1874

STEP NO--UR/0046/70/016/001/0025/0031

CIRC ACCESSION NO--AP0106542

UNCLASSIFIED

2/3 027

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0106542

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NONLINEAR INTERACTION OF SURFACE WAVES EXISTING ALONG THE CURVILINEAR BOUNDARY OF A LIQUID IS CONSIDERED.

IT IS SHOWN THAT UNDER CERTAIN CONDITIONS A SOUND WAVE IS PROPAGATED WHOSE AMPLITUDE AT LARGE DISTANCES FROM THE BOUNDARY GREATLY EXCEEDS THE AMPLITUDE OF LINEARLY EXCITED WAVES. DETAILED CALCULATION WAS MADE FOR CYLINDRICAL AND SPHERICAL SURFACES. IT IS POSSIBLE THAT THIS EFFECT ACCOUNTS FOR THE BREAKDOWN OF THE JETS AND DROPS OF LIQUID OBSERVED IN SEVERAL EXPERIMENTS. A METHOD IS PROPOSED WHICH MAKES IT POSSIBLE TO EXTEND RESULTS TO THE CASE OF AN ARBITRARY CONVEX SURFACE WITH A SMOOTHLY CHANGING CURVATURE. THE THEORY SET FORTH CAN PROVE USEFUL IN CALCULATING THE NOISE PRODUCED BY A VIBRATING SURFACE. LET US ASSUME A CONVEX CLOSED SURFACE  $S$  SUBO:  $R$  EQUALS  $R$  SUBO ( $U, V$ ),  $R$  IS IDENTICAL TO ( $x, y, z$ ). IT DIVIDES THE SPACE INTO TWO REGIONS: EXTERNAL AND INTERNAL. ONE OF THE REGIONS IS FILLED WITH A MEDIUM WITH A CONSTANT SPEED OF SOUND AND WITH THE DENSITY OF THE UNPERTURBED STATE  $P$ . AS  $S$  SUBO, BOUNDARIES OF TWO TYPES ARE CONSIDERED: LIQUID VACUUM INTERFACE AND A THIN ELASTIC MEMBRANE BOUNDING A LIQUID OR GAS. THEN LET THERE BE PROPAGATED FURTHER ALONG THE SURFACE  $S$  SUBO WAVES WHOSE LENGTH IS LESS THAN THE WAVELENGTH OF SOUND IN THE MEDIUM, SUCH THAT THEIR AMPLITUDE QUITE RAPIDLY DIES AWAY AT INCREASING DISTANCE FROM  $S$  SUBO. THESE WAVES WILL BE REFERRED TO AS SURFACE WAVES IN CONTRAST WITH WAVES HAVING A CONSTANT OR SLOWLY ATTENUATING AMPLITUDE, REFERRED TO AS SOUND WAVES. THE PROBLEM IS THEN TO FIND THE PARAMETERS OF THE SOUND WAVE PROPAGATED BY THE INTERACTING SURFACE WAVES.

UNCLASSIFIED

3/3 027  
CIRC ACCESSION NO--AP0106542

UNCLASSIFIED

PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--FACILITY: ACOUSTICS INSTITUTE OF THE USSR ACADEMY OF  
SCIENCES.

UNCLASSIFIED

USSR

UDC: 541.124

MERZHANOV, A. G., SHTEYNBERG, A. S., and GONCHAROV, Ye. P.

"Peculiarities of High-Temperature Dissociation of Ammonium Perchlorate and Heterogeneous Systems Derived from it"

Novosibirsk, Fizika gorenii i vzryva, No 2, 1973, pp 185-191

Abstract: The purpose of this theoretical article is to analyze the effect of dissociative sublimation on the macrokinetic high-temperature decomposition of ammonium perchlorate (APC) and model mixtures derived from it. Dissociative sublimation is the distinctive peculiarity of APC decomposition. The method of the authors is to use the physical representations of the "volume vaporization" effect developed in an earlier article (A. G. Merzhanov, et al, FGV, 4, 4, 1968) in the decomposition process of volatile explosive materials in the condensed phase. Although APC does not melt at temperatures below 550° C, the general run of its decomposition is similar to that of secondary explosive materials. The present article examines the effect of pressure on APC high-temperature decomposition and the decomposition of APC-polymer mixtures. Tables are given for experimentally determined values of the thermal effects of the decomposition, and for the  
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USSR

UDC: 541.124

MERZHANOV, A. G., et al, Fizika goreniya i vzryva, No 2, 1973, pp  
185-191

decomposition characteristics of the various mixtures considered.  
Both stages of the decomposition are discussed.

2/2

- 40 -

USSR

UDC: 612.836.81.014.424.5

LOBANOVA, Ye. A., and GONCHAROVA, A. V., Institute of Labor Hygiene and Occupational Diseases, Academy of Medical Sciences USSR

"Conditioned Activity in White Rats Exposed to Ultrashort and Short Radio Waves"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 1, 1971, pp 29-32

Abstract: Rats were exposed to ultrashort (150 v/m) or short (2,250 v/m) radio waves 60 min daily for 4 months. CNS function was evaluated by the conditioned reflex (motor-food) method. Conditioned activity remained unimpaired in the rats after the first few sessions of ultrashort waves, but thereafter the latent period of the conditioned response to the weak stimulus shortened. Conditioned activity returned to normal 20 days after the last exposure. Thus, ultrashort radio waves tend to increase the excitability of the cortex. In the animals exposed to short waves, conditioned activity changed after the first few sessions. During the ensuing exposures it became inhibited. Eventually all the conditioned reflexes disappeared both before and after differentiation. The increased excitability after chronic irradiation with ultrashort waves is regarded as a response to weak stimulation, while the inhibition caused by irradiation with short waves is a response to stronger stimulation.

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UDC 519.24

USSR

GERANIN, V. A., GONCHAROVA, A. Ya., MIRONOV, N. A., PRODEUS, A. N.

"Influence of Errors in Quantization of a Random Process on Accuracy of Measurement of Correlation Function"

Metody Predstavleniya i Apparatury Analiz Sluchayn. Protssesov i Poley, 5-y vses Simpozium. Sekts. 3. [Methods of Representation and Hardware Analysis of Random Processes and Fields. Third All-Union Symposium, Section 3--Collection of Works], Leningrad, 1970, pp 71-76, (Translated from Referativnyy Zhurnal Kibernetika, No 5, 1971, Abstract No. SV196 by A. Dorogovtsev).

Translation: The dispersion of the estimate of a correlation function of a stable process is studied, constructed on the basis of discrete observations of the process, distorted either by additive random addition or produced at random moments in time, differing slightly from fixed nonrandom moments.

1/2 017 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--ANTIFROTHING AGENTS FOR AQUEOUS SYSTEMS CONTAINING SURFACE ACTIVE  
AGENTS -U-  
AUTHOR--(03)--GOLDMB, L.M., MAY, L.S., GONCHAROVA, G.G.  
COUNTRY OF INFO--USSR  
SOURCE--KHIM. PROM. UKR. 1970, (2), 41-3  
DATE PUBLISHED--70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--ANTIFOAM ADDITIVE, SURFACE ACTIVE AGENT, EMULSION,  
POLYSILOXANE/(U)PMS1000A POLYSILOXANE, (U)OS2 EMULSIFIER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--2000/0959

STEP NO--UR/0436/70/0007-02/0041/0043

CIRC ACCESSION NO--AP0124619

UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124619

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. GOOD RESULTS WERE OBTAINED WITH THE PRODUCT SE-2, CONSISTING OF A 30PERCENT EMULSION OF POLY(METHYLSILOXANE) PMS-1000A MADE IN A 3PERCENT AQ. SOLN. OF THE EMULSIFIER OS-2 BY MIXING AT 300 RPM. THIS ANTIFROTHING AGENT USED IN AMTS. OF 0.01-0.05PERCENT WAS EFFECTIVE IN PREVENTING FROTH FORMATION AND IN BREAKING THE FROTH IN AQ. SOLNS. CONTG. ANIONACTIVE AND NONIONIC SURFACTANTS. FACILITY: RUBEZHAN. FILIAL, NIDPK, RUBEZHNOE, USSR.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--23OCT70  
TITLE--CHLORINE 35 NUCLEAR QUADRUPOLE RESONANCE NQR OF 1,ALKANECARBOXYLIC  
ACID CHLORIDES -U-  
AUTHOR-(04)-VORONKOV, M.G., FESHIN, V.P., GONCHAROVA, I.N., MIRONOVA, L.I.

COUNTRY OF INFO--USSR

SOURCE--LATV. PSR ZINAT. AKAD. VESTIS 1970, (2), 35-7

DATE PUBLISHED----- 70

SUBJECT AREAS--CHEMISTRY, NUCLEAR SCIENCE AND TECHNOLOGY, PHYSICS

TOPIC TAGS--NUCLEAR RESONANCE, CARBOXYLIC ACID, ALKANE, CHLORINATED  
ORGANIC COMPOUND, SPECTRUM, ELECTRON TRANSFER, CONJUGATE BOND SYSTEM,  
CHLORINE ISOTOPE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1997/0649

STEP NO--UR/0197/70/000/002/0035/0037

CIRC ACCESSION NO--AP0119561

UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0119561

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. WITH THE PURPOSE TO LEARN THE NATURE OF THE ELECTRON TRANSFER THROUGH SATD. HYDROCARBON CHAIN THE PRIME35 CL NQR SPECTRA WERE STUDIED IN A SERIES OF COMPOS. OF THE TYPE  $X(CH_2)_N Y$ , WHERE X EQUALS ME OR COCL, N EQUALS 0-10, 12, 13, AND X EQUALS Y EQUALS COCL, N EQUALS 0-8. THE SPECTRA WERE MEASURED AT 77DEGREESK ON A SPIN ECHO TYPE APP. THE RESONANCE FREQUENCY  $\nu$  FOR BOTH SERIES STUDIED ARE SIMILAR (SIMILAR TO 29 MHZ) AND LOWER THAN IN THE CORRESPONDING CL ANALOGS (X EQUALS ME, Y EQUALS CL, OR X EQUALS Y EQUALS CL). THIS IS DUE TO THE GEMINAL CONJUGATION BETWEEN THE CL ATOM AND THE C:O GROUP IN THE ACYL CHLORIDES. THE RELATION  $\nu$  VS. N HAS A DIFFERENT CHARACTER FOR EITHER SERIES. IN DIACYL CHLORIDES THE  $\nu$  VALUE DECREASES ON PASSING FROM N EQUALS 0 TO N EQUALS 3 OWING TO A DECREASED MINUS 1 EFFECT. AT N EQUALS 3-8 IT OSCILLATES AROUND AN AV. VALUE LARGER FOR EVEN AND SMALLER FOR ODD N VALUES. THE AMPLITUDE OF THESE OSCILLATIONS AND THE AV.  $\nu$  VALUE INCREASES WITH LENGTH OF THE CHAIN. IN MONOACYL CHLORIDES THE  $\nu$  VALUE OSCILLATES BEGINNING FROM N EQUALS 0. FOR N EQUALS 1  $\nu$  IS INCREASED CONTRARY TO THE EXPECTATIONS ON THE BASIS OF THEIR SIGMA VALUES. THIS IS DUE TO THE SIGMA, SIGMA INTERACTION EFFECT OVERWEIGHING THE PLUS 1 EFFECT OF THE ALKYL GROUP. WHEN PASSING FROM N EQUALS 1 TO 2 THE  $\nu$  VALUE BECOMES LOWER AS THE PLUS 1 EFFECT BECOMES INOPERATIVE THERE. ON FURTHER LENGTHENING OF THE CHAIN (N LARGER THAN 2) THE PERIODIC CHANGES OF  $\nu$  RESULT ONLY FROM THE OSCILLATION EFFECT WHICH IS REGULAR THERE.

FACILITY: INST. ORG. SIN., RIGA, USSR.

UNCLASSIFIED

USSR

UDC 669.71.018.9.4

GONCHAROVA, L. A., ZOLOTOREVSKIY, YU. S., RUDOMETOV, V. S., SEREBRIYSKIY, E. I.

"Experiment in Refining Aluminum Alloys"

V sb. Metallurpiya (Metallurgy -- collection of works), No 14, Leningrad, Sudostroyeniye Press, 1971, pp 35-42 (from RZh--Metallurgiya, No 4, Apr 72, Abstract No 4G197)

Translation: Laboratory experiments in refining the Al-alloys of the Al-Zn-Mg system by argon scavenging and also powdered hexachloroethane suspended in the Ar are described. The blowing parameters were investigated using an aqueous model. Results are presented from studying the contamination of the metal and determining its physical-mechanical and corrosion characteristics. 5 illustrations, 2 tables and a 9-entry bibliography.

1/1

- 18 -

USSR

GONCHAROVA, L. I.

"The Problem of the General Organization of a System of Analytic Transforms"

Vychisl. Mat. i Vychisl. Tekhn. [Computer Mathematics and Computer Technology -- Collection of Works], No 3, Khar'kov, 1972, pp 62-63 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V653, by the author).

Translation: A number of problems relating to machine architecture are studied. The idea of conversion of a computer to an "analytic" machine is set forth. 7 biblio. refs.

USSR

GONCHAROVA, L. I., STANEVICHYUS, A.-I. A

"The LP Language"

Algoritmy i Algoritmich. Yazyki [Algorithms and Algorithmic Languages -- Collection of Works], No 5, Moscow Acad. Sci. USSR Computer Center, 1971, pp 94-104, (Translated from Referativnyy Zhurnal, Kibernetika, No 3, 1972, Abstract No 3 V510 by the author's).

Translation: A description is presented of a language which can be used as the basis for an automatic system for solution and investigation of problems of linear programming. The language allows access to a library of sub-routines, each of which solves some part of the overall problem, control of their operation, varying the parameters defined.

Surgery

USSR

UDC 616.005.1-085.468

SHRAGO, M. I., SHINKARENKO, A. A., GONCHAROVA, I. S., RYBUS, M. YA., and  
POLUPAN, V. N., Khar'kov Scientific Research Institute of General and Emergency  
Surgery, Khar'kov

"Local Hemostatics Based on Oxidized Cellulose"

Leningrad, Vestnik Khirurgii imeni I. I. Grekova, Vol 106, No 5, May 71,  
pp 61-64

Abstract: Hemostatics prepared on the basis of oxidized cellulose by methods developed by workers at the Khar'kov Chemico pharmaceutical Institute (B. G. Yasnitskiy, Ye. B. Dol'berg, V. A. Oridoroga, A. A. Shalimov, V. N. Polupan, A. A. Shinkarenko, and M. I. Shrigo) were subjected since 1965 to experimental and clinical tests at the Khar'kov Scientific Research Institute of General and Emergency Surgery. After experimental tests on animals, the hemostatics were applied clinically at the Institute of General and Emergency Surgery under the direction of Prof. A. A. Shalimov, Corresponding Member of the Academy of Sciences Ukrainian SSR, Director of the Institute. Hemostatic gauze, hemostatic viscose fabric, and the hemostatic composition Oxycellodex (hemostatic gauze powder + 20% of a dextran solution with a mol. wt. of 45,000-70,000) were applied successfully on patients. The gauze and viscose fabric were used to stop the blood flow from small blood vessels after major

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SHRAGO, M. I., et al., Vestnik Khirurgii imeni I. I. Grekova, Vol 106, No 5, May 71, pp 61-64

operations. An advantage of these hemostatics was that they did not have to be removed from the wound, because they were resorbed. Oxycellodex was injected with a syringe to fill the channels left after transcutaneous puncture biopsy of the liver of splenic portography. The hemostatic gauze is being produced at the experimental plant of the Khar'kov Chemico pharmaceutical Institute. Preparations for the production of the hemostatic viscose fabric at this plant have been made.

2/2

- 84 -

CONCHAROVA, M.A.

UR 0482

AAC0052688

Soviet Inventions Illustrated, Section III Mechanical and General,  
Derwent, 9-70

244576 GANTRY CRANE comprising trolley with polyspast hoist mechanism has the polyspasts set horizontally and symmetrically about the lateral axis of the trolley. This increases the height to which the load can be lifted. The crane consists of a rigid rectangular frame 1 with running wheels 2, driven by electric motor 3 via reduction gear 4 and pivoted shafts 5. The trolley is in the form of bearing beam 6 with running wheels 7 driven by electric motor 8 via reduction gear 9 and shafts 10. The hoist mechanism with two load suspensions is made in the form of two horizontal polyspasts. The fixed pulleys 12 are set at the edges of the trolley, and the moving pulleys 13 are connected to running nuts, moving in guide beams 6 along a screw driven by electric motor 16 via a reduction gear. Traction cables 18 pass round the fixed and moving

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pulleys. When motor 16 is switched on the screw is rotated via its reduction gear. Due to its two-way thread, the nuts are moved opposite ways, thus moving apart or together the moving pulleys 13, shortening or lengthening the freely hanging suspensions on pulleys 12.

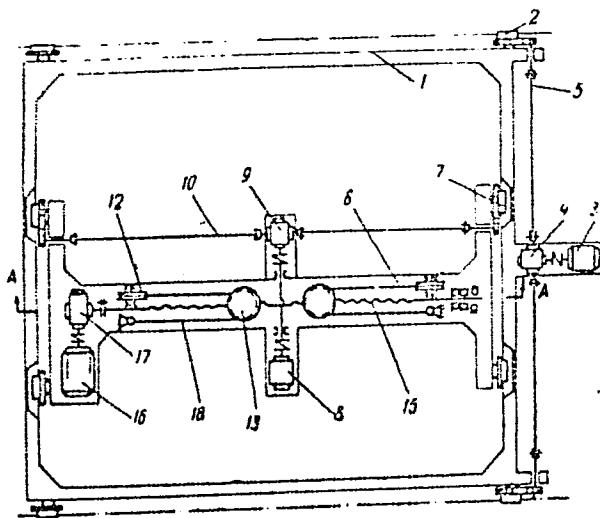
29.12.64. as 936420/27-11, GUBIN, I.P. et al.  
Eastern Mining Res. Inst. (8.10.69) Bul.  
18/28.5.69. Class 35b, Int. Cl. B 66c.

Gubin, I.P.; Sed'ko, A.P.; Bukhtin, V.S.; Lyubkin, A.P.;  
Goncharova, M.A.; Vostochnyy Nauchno-Issledovatel'skiy  
Gornorudnyy Institut

27

19821470

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3/3

19821471

1/2 023 UNCLASSIFIED PROCESSING DATE--18SEP70  
TITLE--THE MORPHOLOGICAL CHARACTER OF CHANGES IN THE FEMORAL HEAD AFTER  
REDUCTION OF CONGENITAL DISLOCATION -U-  
AUTHOR-(03)-GONCHAROVA, M.N., MIRZYEVA, I.I., YAROSHEVSKAYA, YE.N.

COUNTRY OF INFO--USSR

SOURCE--ORTOPEDIYA, TRAVMATOLOGIYA I PROTEZIROVANIYE, 1970, NR 2, PP 10-15

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--MORPHOLOGY, NECROSIS, ORTHOPEDIC SURGERY, TISSUE REGENERATION,  
BONE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--1983/1405

STEP NO--UR/9115/70/000/002/0010/0015

CIRC ACCESSION NO--AP0054269

UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054269

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE CHANGES WHICH DEVELOP IN THE FEMORAL HEAD IN COMPLICATED COURSE OF CLOSED, LESS FREQUENTLY OPEN, REDUCTION OF CONGENITAL DISLOCATION OF THE HIP WERE SUBJECTED TO HISTOLOGICAL AND HISTOCHEMICAL STUDY. SECTIONS OF ARTICULAR CARTILAGE OF 34 FEMORAL HEADS AND 7 SOCKETS HAVE BEEN INVESTIGATED IN 37 CHILDREN AND ADOLESCENTS RANGING IN AGE FROM 3 TO 17 YEARS. IN PART OF CASES THE BONE TISSUE UNDERLYING THE ARTICULAR CARTILAGE HAS BEEN STUDIED. THE AUTHORS DISCLOSED NONSPECIFIC CHANGES OF ARTICULAR CARTILAGE OF REACTIVE CHARACTER AS MIGHT BE ENCOUNTERED IN A RANGE OF OTHER PATHOLOGICAL PROCESSES: FOCI OF NECROSIS AND NECROBIOSIS, CARTILAGINOUS TISSUE DEDIFFERENTIATION INTO FIBRILLAR CONNECTIVE TISSUE, AS WELL AS A REGENERATIVE REACTION IN THE FORM OF CARTILAGINOUS CELL PROLIFERATION. IN SOME CASES DISTURBANCES OF EPIPHYSEOGENESIS WERE OBSERVED AS THE RESULT OF CARTILAGINOUS CELL DEDIFFERENTIATION OF THE ENCHONDRAL GROWTH ZONE. A DEPENDENCE WAS FOUND BETWEEN THE NUMBER OF REPEATED REDUCTIONS AND DEGREE OF SEVERITY. THE RESULTS SUPPORT THE BELIEF THAT THE INJURIOUSNESS PROVOKING THE REACTION IN THE GIVEN CASE ARE THE ANTIPIHYSIOLOGICAL CONDITIONS OF THE INTEGUMENTARY CARTILAGE EXISTENCE IN THE POSTOPERATIVE PERIOD. OF ALL THE KNOWN TERMS CHARACTERIZING THE CHANGES IN THE FEMORAL HEAD WHICH SOMETIMES DEVELOP AFTER REDUCTION, THE TERM "PATHOLOGICAL RECONSTRUCTION" APPEARS TO MOST PRECISELY DETERMINE THE NATURE OF THE PROCESSES WHICH TAKE PLACE.

UNCLASSIFIED

USSR

UDC 613.647:614.89

MAKSIMENKO, N. V., YEVTUSHENKO, G. I., and GONCHAROVA, N. N., Khar'kov  
Scientific Research Institute of Labor Hygiene and Occupational Diseases,  
Khar'kov

"Fundamentals of the Screening of Electromagnetic Fields"

Moscow, Gigiyena i Sanitariya, No 2, Feb 73, pp 108-110

Abstract: Exposure of personnel to the action of electromagnetic fields may constitute an occupational hazard. The most effective procedure for protecting personnel against these fields is electromagnetic screening. The simplest method of carrying out engineering calculations for metal screens to be used for this purpose that are effective in the long-wave range has been proposed by D. N. Shapiro (Radiotekhnika, No 4, 1955). Screens calculated by this method are being applied for the elimination of radio disturbances at present.

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GONCHAROVA, N. N.

UDC 613.647:612.8.014.426

EFFECT OF AN ELECTROMAGNETIC FIELD IN THE METER RANGE ON THE NERVOUS SYSTEM OF ANIMALS, BASED ON PHYSIOLOGICAL AND BIOCHEMICAL STUDIES

Article by N. N. Goncharova and N. I. Mischenko, Institute of Labor Hygiene and Vocational Diseases, Moscow, Glyukona truda i professional'nogo zabolovanija, Kuzbass, No 7, 1973, pp 22-24

JPRS 60608

21 November 1973

Multiple experiments and clinical studies indicate the high sensitivity of the human and animal nervous system to the effects of an electromagnetic field in the radio frequency band (H. S. Tolpakova and Z. V. Gordon; M. A. Idrimov; P. P. Fokalov; I. A. Kilmovskaya et al.). It should be noted that thus far there is no clear concept of the difference in effect of magnetic and electrical fields on the body. Only the works of N. V. Nikonova clarify the effects of electrical and magnetic fields of super-high frequency on the functional state of the nervous system.

The object of this work -- to study the character of the biological effect of meter-band electrical and magnetic fields to clarify the specificity of their effect on the functional state of the nervous system of animals.

The study employed 260 rats in a chronic experiment (lasting 4 months) at different field intensities. The action of magnetic and electrical fields was studied primarily at nonthermogenic voltages at one energy level (800 V/m  $\approx$  2 A/m; 200 V/m  $\approx$  1 A/m), which allowed to a certain degree the comparison of results of the action of electromagnetic field components. The experimental animals were divided into five groups: the first and second groups were subjected to an electrical field strength of 800 and 200 V/m, the third and fourth, to a magnetic field with an intensity of 2 and 1 A/m respectively; the fifth group consisted of control rats.

The indicators of the functional state of the CNS were determined by the defensive conditioned reflex method (according to I. S. Alukhandova and M. G. Tulbina) and summation of subthreshold impulses (Speranskij). Also studied were separate aspects of carbohydrate and nitrogen metabolism (content of glycogen, glucose, urea, pyruvic acid, protein metabolism (concentration of acetylcholinesterase activity).

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1/2 016 UNCLASSIFIED  
TITLE--ZEOLITE CONTAINING METAL CATIONS -U-

PROCESSING DATE--04DEC70

AUTHOR--(05)-KARZHEV, V.I., PIGUZOVA, L.I., GONCHAROVA, N.V., SVIRINA,  
V.P., KRIVQZUBOVA, N.V.  
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 265,078  
REFERENCE--OTKRYTIYA, IZOBREET., PROM. OBRAZTSY, TOVARNYE ZNAKI, 1970 47  
DATE PUBLISHED--09MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ZEOLITE, METAL ION, LANTHANUM COMPOUND, CHEMICAL PATENT,  
THERMAL EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--3007/0860

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0136294

UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AA0136294

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ZEOLITE, CONTG. CATIONS OF GROUP VI AND VIII METALS AND LANTHANIDES INTRODUCED IN THE REACTION OF CATION EXCHANGE, IS PREPD. BY MULTIPLE SATN. OF SOLNS. OF SALTS OF THE CORRESPONDING METALS. AFTER EACH SATN., THE ZEOLITE IS THERMALLY TREATED AT 140-550DEGREES. THIS ZEOLITE HAS A HIGH DEGREE OF NA CATION SUBSTITUTION.

UNCLASSIFIED

USSR

UDC 621. 398.08

KARACHENTSEVA, N. YA., FRANTSUZOVA, K.D., GONCHAROVA, B.I., and ALEKSEYEVA, YE. I., Institute of Technical Cybernetics, Academy of Sciences Belorussian SSR

"Device for Monitoring the Reliability of Telemetry Data"

USSR Authors' Certificate No 306485, Cl. G08c 19/28, H 03 k 13/32, filed 29 Apr 72, published 3 Aug 71 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 1, Jan72, Abstract No 1A341P)

Translation: For monitoring the reliability of telemetry data a device is suggested which contains a clipping amplifier and subtraction unit connected via a threshold stage with an analyzer. In order to simplify the device and increase its reliability, it contains a differential filter and detectors, with the differential filter's input connected with the clipping amplifier's output, and the differential filter's outputs connected via the detectors with the subtraction unit's input.

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USSR

UDC 575.595.773.4

GONCHAROVA, R. I., KULINYe. T., and SENATOROVA, T. P.

"Relationship Between the Intensity of Mutation in *Drosophila* and the Frequency of Electromagnetic Fields in the 1 to 600 mHz Range"

Minsk, Izvestiya Akademii Nauk BSSR, No 1, 1973, p 140

Translation of Russian abstract: The authors studied the genetic activity of radiofrequency fields in the 1 to 600 mHz range in experiments with *Drosophila melanogaster*, using recessive sex-linked lethal mutations as a criterion. They also studied the mutation response in sperm from males of the Berlin strain. They used continuous oscillations created by a GZ-12 oscillator in the 1 to 135 mHz range and by a GS-6 oscillator in the 200 to 900 mHz range. The flies were exposed in a specially constructed chamber whose upper and lower sides were made of brass and consisted of condenser plates 80 mm in diameter.

Exposure to frequencies of 1, 5, 30, 40, 50, 60, 70, 80, 90, 100, 130, 200, 340, 360, 400, 420, 500, and 600 mHz did not have any statistically significant effects. Only fields at frequencies of 300 and 440 mHz exhibited mutagenic activity.

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USSR

UDC 575.24

GONCHAROVA, R. I., and KULIN, Ye. T., Institute of Genetics and Cytology, Academy of Sciences Belorussian SSR

"Mutagenic Action of Radio-Frequency Fields"

Minsk, Izvestiya Akademii Nauk BSSR, Seriya Biologicheskikh Nauk, No 5, 1970, pp 128-130

Abstract: *Drosophila melanogaster* flies were subjected to the action of radio-frequency fields produced by the UVCh-40 (field A, frequency  $38 \pm 3$  Mhz) and Luch-58 (field B with a frequency of  $2375 \pm 50$  MHz) medical generator in order to study the effects of the fields on the development of recessive, sex-linked lethal mutations. The exposure used for field A was 5 seconds. For exposures of 10-15 seconds, all of the flies perished because of a thermoselective effect produced by the field. Exposure to field B, which produced less severe immediate biological effects, was for 10 minutes. After exposure to the action of field A, male flies were crossed with ClB females 1-3, 5-7, 7-9, and 10-12 days later and the frequency of mutations in the progeny was determined. The results were not conclusive. An increased frequency of mutations, which was associated with the action of field A on spermatozoons at the time when they were in the spermatid

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USSR

GONCHAROVA, R. I., and KULIN, Ye. T., Izvestiya Akademii Nauk BSSR, Seriya Biologicheskikh Nauk, No 5, 1970, pp 128-130

stage (this corresponded to the 5-7th and 7-9th days after irradiation), was noted in only some of the experiments. Exposure to field B has no effect on the frequency of mutations.

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USSR

UDC: 612.351.11.014.46:576.097.29

ONCHAROVA, V. I., and NEVSKAYA, I. V., Division of Infectious Pathology and Experimental Therapy of Infections, Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, Academy of Medical Sciences USSR, Moscow

"The Effect of Liver Tryptophan Oxygenase Activity on the Outcome of Intoxication Caused by Endotoxin"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, Vol 70, No 12, Dec 70, pp 34-36

Abstract: To elucidate the role of hormonal and substrate induction of tryptophan oxygenase in the survival of mice poisoned by *Salmonella typhi* murium endotoxin, the animals were given various doses of cortisone and tryptophan. Cortisone (0.5 mg/kg) sharply increased the activity of the hormone in intact mice within 4 hours; in poisoned mice it maintained the normal tryptophan oxygenase activity and thereby enabled all of the animals to survive, whereas 50 to 70% of the controls died. Smaller doses of the hormone did not have this effect. Tryptophan (250 mg/kg or more) likewise maintained the normal level of activity of the enzyme, but it had no effect on the survival rate; some 50 to 70% of the animals died. Thus, substrate induction, unlike hormonal induction, is a pro-

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